

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## PCW\_\_09\_\_22 Coordinate transformations v14

### Question 1

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 8 \cdot f[3(x + 6)] - 2$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a}{3} - 6, 8b - 2 \right)$$

### Question 2

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 4 \cdot f\left[\frac{x}{7} - 5\right] + 6$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow (7(a + 5), 4b + 6)$$

### Question 3

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 2 \cdot (f[3(x - 5)] + 8)$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a}{3} + 5, 2(b + 8) \right)$$

## PCW\_09\_22 Coordinate transformations v14

### Question 4

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = \frac{f[5x - 8]}{7} + 9$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a + 8}{5}, \frac{b}{7} + 9 \right)$$

### Question 5

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 3 \cdot \left( f\left[\frac{x}{9} + 6\right] - 8 \right)$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow (9(a - 6), 3(b - 8))$$

### Question 6

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = \frac{f[9x + 8] + 6}{5}$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a - 8}{9}, \frac{b + 6}{5} \right)$$